

Chapter



1

SIGNS AND SIGN SYSTEMS

This chapter introduces basic concepts of language, especially the *sign*, and presents the basic structure and general nature of language.

1. THREE BASIC CONCEPTS: SIGN, COMMUNICATION, AND LANGUAGE

1.1. Sign

In ordinary language a sign is a notice placed for the public to see. Here, however, following technical and linguistic usage, let **sign** mean ‘an intersection or relationship of **form** and **meaning**’, where form is something concrete, including writing, sound, and gestures, and meaning is something mental or cognitive.

Examples of signs in this sense include:

‘∞’, which means ‘infinity’,

‘©’, which means ‘copyrighted’,

‘♥’, which means ‘love’, as in ‘I ♥ New York’,

‘*sign*’, which means ‘an intersection or relationship of form and meaning’.

As in the last example, a sign may be a word. A sign does not have to be seen; it could be heard, as is the usual case with words, which are more often spoken than read.

A sign is neither form nor meaning, but simultaneously both: the intersection or relationship of form and meaning. A form without a meaning is not a sign, nor is a meaning without a form. It may be argued that form and meaning cannot exist apart from one another, and it is not easy to argue otherwise. But this rather difficult and profound matter cannot be considered here.

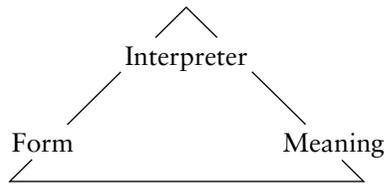


Figure 1.1 The three parts of a sign

1.2. Communication

The notion ‘sign’ is fundamental to understanding human communication, and upon the basis of the above understanding, we can define **communication** as ‘the use of signs’. In communication, one presents the form of signs to others, and so invokes their meanings.

But communication is seldom perfect, and this can be understood as resulting from the third dimension of a sign, the interpreter; see figure 1.1. The relationship between the form of a sign and its meaning must be part of the knowledge of its interpreter. The interpreter adds an aspect or dimension of variability to our understanding of *sign*, because different interpreters may recognize different aspects of meaning in association with particular forms, and different forms in association with particular meanings. This variability is probably apparent with some of the four signs ‘∞’, ‘©’, ‘♥’, and ‘*sign*’. Some interpreters of these may not recognize the meaning ‘infinity’ of the ∞ form, and some may be unfamiliar with the still somewhat novel extension of ‘♥’ to mean ‘love’. As for the fourth sign, ‘*sign*’, the meaning of this as a technical term has only just been introduced to most readers, whose interpretations undoubtedly vary considerably at this time.

1.3. Language

Language, then, can be simply defined as a sign system. Usually, however, *language* means specifically the customary sign system of humankind, and here we shall follow this usage. Sometimes language, in this sense, is termed **speech**, a term which properly refers just to the vocal medium typically employed to form the natural signs of human languages.

2. SIGNS

2.1. Three types of signs

There are three types of signs (as recognized by the philosopher Charles Sanders Peirce (1839–1914)), which differ according to the three types of relationship that exist between form and meaning: icon, index, and symbol.



Three iconic signs



Three indexical signs

Push
[puʃ]

Empuje
[ɛmpuhe]

ገፋ
[gifu]

Three symbolic signs:

'Push!' in English, Spanish and Amharic

Figure 1.2 The three types of signs

2.1.1. *Icon*

An **icon** is a sign whose form has actual characteristics of its meaning. See three examples of iconic signs in figure 1.2. The first means 'man', the second 'Texas', and the third 'winding road'. These three signs can have the meanings 'man', 'Texas', and 'winding road', respectively, since, obviously enough, the forms have actual characteristics of these meanings. The third may not be so obvious, in fact, but when seen posted at the side of a highway, in a mountainous area, its iconic characteristic may be apparent enough.

2.1.2. *Index*

An **index** is a sign whose form has characteristics which are only associated in nature with its meaning. Recognizing indexical signs can be a little tricky. See three examples of indexical signs in figure 1.2. The first example is a skull and crossed bones, traditionally a sign meaning 'poison'. Notice the indexical, natural, relation between this form and its meaning: 'if you drink the contents of this bottle, in a few months you will look like this'. Similarly, an oil well could mean 'Texas', since oil wells are something naturally associated with Texas. The third sign, when seen posted at the side of a highway, will suggest 'restaurant' or 'food (service)', by the natural association of spoons and forks with these meanings.

The difference between icon and index is not always perfectly clear. A spoon and fork may be considered an actual characteristic (icon) of restaurants, if only an association (index) with food. The interpreter/interpretation is crucial to the determination of a sign as icon, index, or symbol. The difference between icon

and index is especially problematic when meanings are abstract. Take the meaning ‘liberty’, for example, and its occasional form of ‘breaking chains’. Such a picture/form may be associated with ‘liberty’ because such an event is an actual characteristic of this otherwise somewhat abstract idea, or, if ‘liberty’ is essentially something quite abstract (personal, and emotional), because the breaking of chains is just an occasional association with ‘liberty’ as a precondition in history.

2.1.3. *Symbol*

A **symbol** is a sign whose form is arbitrarily or conventionally associated with its meaning. See three examples of symbolic signs in figure 1.2. These are necessarily presented here in their secondary, written, forms, as ordinarily spelled, and in phonetic writing. The first example, the written English word *push* [puʃ], only means ‘push’ by a completely arbitrary or conventional association of this form, whether spoken or written, with this meaning. Nothing in nature associates this word with this meaning. In fact, to those who have grown up in the English-speaking world it may seem completely normal that this form should have this meaning. On reflection, however, it must be clear that there is nothing intrinsic to the natural world about this normality, which results entirely from the customary usage or convention of English-speaking communities. The other examples, the Spanish and Amharic (a language of Ethiopia) written words for ‘push’ – like the English words, those which would be written on a door, as an instruction – are also such symbolic signs.

2.2. Linguistic signs

2.2.1. *Morphemes*

The simplest sort of sign in (human) languages is a **simple word**. An example of a simple word is *sea*, which contrasts with a **complex word** like *seashell*. *Sea* has one meaning and *seashell* has two. But linguistic signs don’t have to be words: the *un-* and the *-ly* of *unhappily*, for example, are meaningful too, and these are not words. A linguistic sign, whether of the word type, like *sea* and *shell*, or the sub-word type, like *un-* and *-ly*, is a **morpheme** (*morph* is from Greek, ‘form’). There are two morphemes in the word *seashell* (*sea*, *shell*) and three in *unhappily* (*un-*, *happy*, *-ly*).

Although here on the pages of this book it is necessary to present words and morphemes in their written or **orthographic form**, these are ordinarily more common in their spoken or **phonetic form**, a pattern of sound produced by a set of articulations of the physiological apparatus of speech including the lungs, larynx, tongue, velum, lips, etc.

2.2.2. *Symbolic nature of morphemes*

With rare exception, the typical signs of human language, morphemes, are symbolic signs, like *push*, *sea*, *un-*, or other examples of English or of any other

language you know. That is, there is no characteristic of their meaning in their form (whether spoken or written), nor any natural association between their form and meaning.

There are two good reasons why linguistic signs should typically be symbolic. First, we have to process these signs at a rapid average rate of two to three per second, so there is just no time to make use of their iconic and/or indexical aspects. Second, most linguistic meanings don't have iconic or indexical formal properties which could be expressed as vocalizable sounds.

2.2.3. *Evidence for the symbolic nature of linguistic signs*

There are four sorts of clear evidence that morphemes (and words) are typically symbolic: translation equivalents, synonyms, and iconically expressible meanings, and the rarity of plainly iconic and indexical morphemes.

2.2.3.1. *Translation equivalents.* **Translation equivalents** are words with approximately the same meanings in different languages. If words were typically iconic or indexical, then translation equivalents from language to language would be similar in form as well as meaning. The word meaning 'dog', for example, should sound (or look) the same in different languages. But in English, a dog is called a *dog*, in French *chien*, in Spanish *perro*, and in Arabic *kalb*. This is typical for translation equivalents: the words don't sound (or look) similar at all.

2.2.3.2. *Synonyms.* **Synonyms** are words with same or similar meanings within a language, for example *sick* and *ill*, and *twelve* and *dozen*. If morphemes were typically iconic or indexical, words with the similar meaning within a language should have similar form. But again there is little or no similarity of form; *sick* doesn't sound like (and isn't spelled like) *ill*, etc.

2.2.3.3. *Iconically expressible meanings.* Consider meanings that, theoretically, could be readily expressed as pronunciations. An example would be numbers, such as 'one', 'two', etc. If morphemes were iconic or indexical, the form of 'two' would be twice as big as the form of 'one', and the form of 'four' would be twice as big as the form of 'two'. But this isn't so. True, *twenty* is bigger than *ten*, but not twice as big, and *thirty* is not bigger than *twenty* at all. Another example is physical quality opposites like *narrow/wide* and *big/small*. If morphemes were iconic or indexical, the word for 'narrow' should be narrower than the word for 'wide', and the word for 'big' bigger than the word for 'small'. Instead, *narrow* is wider than *wide*; *wide* is narrower than *narrow*, etc.

2.2.3.4. *Exceptionality of iconic and indexical morphemes.* There are some words which are iconic signs, termed **mimetic words** (also called onomatopoeic words). Mimetic words sound like what they mean, for example, *bow-wow*, *tick-tock*, and *bam*. The phonetic forms of such words have actual characteristics of their meanings, which are sounds; mimetic words sound something like the

sounds they mean. *Bow-wow*, at least, sounds more like the sound of a dog than does *meow* and *meow* sounds more like the sound of a cat than does *bow-wow*. Indeed, in many languages around the world, the word for the sound of a dog is mimetic, and thus somewhat similar to *bow-wow*:

French: wah-wah
 Arabic: ʔaw-ʔaw
 Japanese: wan-wan
 Chinese: wǎw-wǎw

Another case of iconicity in morphemes is drawing out the pronunciation of the word *long* so that the form of the word, like the meaning, is long: *loooong* ('I mean, like, reeally looong, man'). To call a dog a *bow-wow* or a cow a *moo* is also to use iconic signs, since the sound of these words is at least an attempt to give form to an actual quality of the meaning.

But mimetic words are exceptional words! It should be clear that most word-meanings are not – and cannot be – modeled in the forms of the words.

There is rarely some indexicality in words, too. For example, if you want to get someone's attention you might say 'Hey!' If you really want to get their attention you might say it a bit louder, 'HEY!' And if you really, desperately, want to get their attention you might say it even louder, 'HEY!'. This is indexicality; the volume or intensity of the voice naturally rises in association with the intensity of meaning. Notice that this is not iconicity, since the meaning associated with increased loudness is increased interest in getting someone's attention, and loudness is not an actual characteristic of that interest – it's just naturally associated with it. Saying *Oh!* with rising or falling pitch, when excited or disappointed, respectively, gives the word indexical form, in which the pitch is associated with the rise or fall of emotion which may be noted by a hearer as part of the meaning of the word. As with iconic signs, obviously such indexical signs are exceptional cases.

3. LANGUAGE

3.1. Two-part structure of sign systems

Language was defined above as a sign system. Every sign system has two parts:

- a. a **lexicon**, or dictionary, the inventory of its signs, and
- b. a **grammar**, the **rules** for the construction of its signs and for their combination into messages.

Consider an example of a very simple sign system, the traffic light. Its lexicon has three signs and, in one version, its grammar has three rules, as follows:

Lexicon:	<i>Meanings</i>	<i>Forms</i>
	'stop'	red light
	'go'	green light
	'caution'	yellow light

- Rules:
1. From top to bottom, the signs are ordered red-yellow-green.
 2. One color is lighted at a time.
 3. The sequence of lights is green-yellow-red, repeatedly.

Adding possibilities to the lexicon such as a flashing mode, or an arrow-shaped light, and possibilities to the rules such as simultaneous signs (green and yellow at the same time), increases the expressiveness and the complexity of the system. Finally, remember that a sign, or sign system, has a third component, the interpreter. Signs and sign systems are useless unless users have shared knowledge of them.

3.2. Three substructures of language

Within and cutting across this two-part structure of inventory and rules, language has three sorts of substructure: phonology, morphology, and syntax.

3.2.1. Phonology

Phonology concerns the sounds of the forms of language. The few languages that lack phonology are the manually signed languages of the deaf, which instead have, parallel to phonological rules, rules which concern the sub-parts of the discrete gestures of the hands (discussed in chapter 12, §4.1).

Phonological form consists of **phones**, for example the phones [m], [æ] and [p] of *map*, and phones consist of even smaller units, **phonological features**, for example:

- [labial], the feature present at the start of the words *map*, *bad* and *wag*;
- [voiced], the feature present at the start of the words *bad* and *dad* and absent at the start of *pad* and *tad*;
- [nasal], the feature of the first phone of *map* and the first and last phones of *name*.

These three features are simultaneously present in the phone [m], the first sound of *map*, the voiced labial nasal [m]. (Phonetic writing is typically shown within square brackets, [].) Languages differ in the phonological features they employ, and in the possibilities for simultaneous or sequential cooccurrence of features.

The possibilities of combination or cooccurrence of phonological features in morphemes are expressed by **phonological rules**. In English, for example, the

feature [nasal] is present in vowels which precede nasal consonants, as in the vowel of *pan* and *bin*. You can confirm this for yourself by comparing the vowel sounds of these two words to those of *pad* and *bid*, which lack the final nasal consonant.

Four chapters of this book present phonology: 2, 3, 13, and 14.

3.2.2. Morphology

Morphology concerns the classes of morphemes, and their cooccurrence in sentences and combination as words. Among the English morphemes, for example, are the following four, where elements of form are in square brackets, [], and elements of meaning in braces, { }:

[dɔg], {noun, 'dog', animate, non-human, . . . }

[go], {verb, 'go', intransitive, . . . }

[z], {plural suffix of nouns}

[z], {present tense suffix of verbs with third-person singular subject}

Morphological rules express the possible combinations of morphemes as words. For example, the first and third morphemes above, [dɔg] and [z], combine according to rules of English to produce the word [dɔgz] *dogs*, and the second and fourth morphemes [go] and [z] combine to produce the present tense verb [goz] *goes*. Don't let English spelling mislead you; the last consonant is pronounced [z], not [s].

Other languages have different forms for similar meanings, for example French *chien* 'dog' (pronunciation: [ʃjɛ̃]), and simple words for meanings which English expresses by combining words, for example Amharic *ayat* 'grandparent'. But all languages have the capability to express the meanings expressed in other languages. The meaning of Amharic *ayat* English expresses with the combination of words *grand* + *parent*.

Four chapters of this book present morphology: 4, 5, 15, and 16.

3.2.3. Syntax

Syntax concerns the combinations of words as phrases and of phrases as sentences. Every language has words, which combine as phrases and sentences. The possibilities of combination are strictly limited, so every language has syntax, or sentence structure.

Words come in different types based upon their possibilities of combination with other words in sentences. These types are the **parts of speech**: noun, verb, adjective, etc. Nouns, for example (such as English *circus*, *pajamas*, and *story*), combine with determiners (such as English *the*, *these*, *my*) and adjectives (such as English *big*, *red*, *extraordinary*) to make noun phrases, such as *the big circus*, *these red pajamas*, and *my extraordinary story*, and verbs combine with auxiliary verbs (such as English *can*, *might*, *will*, and *have*) and adverbs (such as

English *always*, *then*, and *surely*) to make verb phrases, such as *has already eaten*, *will leave then*, and *surely can't go*.

Syntactic rules specify the possible combinations of words as phrases and as sentences of general types, such as affirmative and negative, statements, commands, questions, etc. In English, for example, questions answerable by *yes* or *no* are typically sentences in which a so-called 'auxiliary' verb appears before the noun phrase subject of the sentence, as in these examples:

Statement

The big circus is opening today.
These red pajamas wouldn't fit.

Yes/No question

Is the big circus opening today?
Wouldn't these red pajamas fit?

Four chapters of this book present syntax: 6, 7, 17, and 18.

3.3. Other types of linguistic structure

In addition to phonology, morphology, and syntax, other types of linguistic structure may be recognized: semantic structure, concerning word and sentence meaning and their interpretation (chapter 17); orthographic structure, concerning writing (chapters 21, 22); pragmatics, concerning how we use language to get meanings beyond those given form by language (chapter 19); and discourse structure, concerning how sentences are fitted to longer stretches of language, as in conversation and arguments.

A basic understanding of the structure of language is necessary for understanding most other aspects of language taken up in this book.

3.4. Six aspects of the general nature of language

Partly as a result of their unique three-part substructure (phonology, morphology, syntax), languages have unique characteristics of a more general nature, and these characteristics tend strongly to distinguish (human) language from other sign systems and from communication in other animal species (the latter the topic of chapter 12). Of many characteristics that have been proposed as unique to language, six are **arbitrariness**, **displacement**, **creativity**, **duality**, **grammaticality**, and **cultural transmission**.

3.4.1. Arbitrariness

Arbitrariness is the above-noted characteristic that the signs of languages (morphemes) are typically **symbolic**: typically, that is, the forms of morphemes are only arbitrarily related to their meanings. Because the form of morphemes is phonetic (vocal sound), only mimetic morphemes can be iconic, and relatively few meanings, otherwise, can be expressed indexically, like the different degrees of intensity/insistence in 'Hey!'.

3.4.2. *Displacement*

Displacement is the characteristic that in languages meanings are expressed which are ‘displaced’ or removed from the concrete or physical presence of the object or stimulus, outside the individual, of those meanings. Having symbolic signs means that we can give form to abstract meanings like ‘past’ and ‘future’, and associate other signs with these. Indeed, all languages have morphemes and constructions which make it possible to talk about the past and future as well as the present, and so to talk about persons and places not present, and even about hypothetical things, like ‘golden mountains’ and ‘the present king of France’.

3.4.3. *Creativity*

Creativity is the characteristic of languages that they readily and regularly permit the expression of new meanings. In fact, the finite forms of language are able to express a non-finite (unbounded) number of meanings. The creativity of language is owed particularly to the two properties of **openness** and **recursion**.

3.4.3.1. Openness. **Openness** is the characteristic of languages that they are always able to come up with new morphemes to express new ideas and new things in the world, and new ways, also, of expressing old ones. A couple of somewhat recent examples in English are *’toon*, a clipped and casual way of saying ‘cartoon’, and *schmooz*, which seems to mean something like ‘entertaining and getting entertained by lobbyists’. The many ways that languages have of fulfilling the property of openness are the topic of chapters 15 and 16.

3.4.3.2. Recursion. **Recursion** allows phrases to expand by the expansion of phrases within themselves. For example, the phrase *a friend* may expand as *a friend of mine*, and this may be an expansion in another phrase *friend of a friend of mine*. The property of recursion makes it impossible to set a limit on the length of sentences, or, therefore, on the number of sentences. Although the signs of languages exist in a limited number of categories, such as noun, verb, and adjective, and although these categories combine with one another in fixed ways, as where a sentence may consist of a noun and a verb (*Dogs bark; Ideas abound*) and a noun phrase may consist of an adjective and a noun (*lucky dog, crazy ideas*), because of recursion nothing limits the length of sentences except the limits of our patience and memory. Recursion is discussed further in chapters 6 and 7.

3.4.4. *Duality*

Duality is the characteristic of linguistic signs that these have a two-part or dual structure, in which the meaningful whole is made up of meaningless parts. Morphemes, that is, are meaningful, but the phones and features which make up the phones are meaningless. Meaningless units [labial], [stop], [voiceless] make up [p], which is still meaningless, but meaningless [p], [t] and [a] combine as

[pat] ‘pot’, [apt] ‘opt’, and [tap] ‘top’. (By the rules of English phonology, the three other possibilities [pta], [tpa], and [atp] are impossible.)

3.4.5. *Grammaticality*

Grammaticality is the characteristic of languages that they have rather strict rules about how things may be said. Only certain sounds may be combined in words, and meanings have to be combined in certain ways, in words and sentences. As just noted, [pat] is a possible English word, but [pta] is not. To form a question in English, one can say *Are they here?*, inverting the subject and verb, but not *Came they here?*. As a consequence of choosing to express certain meanings, languages require that certain other aspects of meaning, so-called ‘grammatical’ meaning, be expressed. In English, for example, if a noun with plural meaning is mentioned its plurality must be expressed as a suffix on the noun. One can’t say *I ate two pear*, even though the plurality of *pear* is obvious given mention of ‘two’, but must say *I ate two pears*. Other languages may not have this requirement, but they have others. The difference between grammatical and lexical meaning is a topic of chapter 4.

All languages – and all stages of language including the earliest child language – have their particular such ‘rules’ of grammar. Utterances in the language which follow the rules are said to be **grammatical**, and those which don’t follow the rules are **ungrammatical**.

3.4.6. *Cultural transmission*

Languages differ from place to place in the world, and we have to learn the form appropriate for the place. This learning is called **cultural transmission**. If languages were completely instinctive or innate (genetically encoded in us), like knowing how to swallow, digest, or to recognize faces, languages wouldn’t differ this way, and we wouldn’t need to learn them.

This cultural transmission of language in humankind contrasts with the **innateness** of the typical signs of nonhuman species, for example the basic songs of most birds or the signs of chimpanzees including facial expressions and a few vocalizations. Animal communication is the topic of chapter 12.

Because language learning by children is almost completely spontaneous, very regular, and seemingly effortless, especially when considered in relation to the complexity of human language, it is certain that we come into the world with a considerable amount of innate knowledge that makes language learning possible: in some sense, expectations about what is a possible language. Perhaps even a significant if highly abstract part of our adult linguistic knowledge is innate to the human species – a controversial issue which comes up elsewhere in this book (chapters 9 and 20). But it is also certain that a significant part of language, also, is not genetically encoded but culturally transmitted, intensively if effortlessly, especially before age four, but throughout life.

Because languages vary, and are learned, they always differ from generation to generation (the topic of chapters 23 and 24). The changed forms of language

persist as variants which distinguish the different varieties of language of social groups, including dialects (the topic of chapter 26), and as the different forms of language by which we express our understanding of different social circumstances (the topic of chapter of 27).



Suggestions for ADDITIONAL READING

Charles Sanders Peirce's writings on his philosophy are notoriously obscure. His basic ideas on his theory of signs may be found in the chapter 'Logic as semiotic: the theory of signs' (1897), in *Philosophical Writings of Peirce*, ed. by Justus Buchler (1955, pp. 98–120). A presentation of Peirce's theory in relation to language is found in chapter 1 of Raimo Anttila's *Historical and Comparative Linguistics* (1989). There is also James Jakob Liszka's *A General Introduction to the Semeiotic of Charles Sanders Peirce* (1996).

There are other compact introductions to linguistics, for example Jean Aitchison's *Teach Yourself Linguistics* (1992), Richard Hudson's

Invitation to Linguistics (1984), and R. L. Trask's *Language: the Basics* (1995). There are many textbooks of introductory linguistics which, like this one, are written for students and include exercises, for example, Edward Finegan's *Language: its Structure and Use* (1994).

On the characteristics of the nature of language, see the first chapter of Anttila (1972). Convenient reference works in which to find more information on this and other specific topics of this book are the *International Encyclopedia of Linguistics* (1992) edited by William Bright, *The Linguistics Encyclopedia* (1992) edited by Kirsten Malmkjaer, and *The Cambridge Encyclopedia of Language*, edited by David Crystal (1987).



IMPORTANT CONCEPTS AND TERMS IN THIS CHAPTER

- sign
- form
- meaning
- communication
- language
- speech
- icon
- index
- symbol
- simple word
- complex word
- morpheme
- phonology
- phone
- phonological feature
- phonological rule
- morphology
- morphological rule
- syntax
- parts of speech
- syntactic rule
- arbitrariness
- displacement
- creativity

- orthographic form
- phonetic form
- translation equivalent
- synonym
- mimetic word
- lexicon
- grammar
- rule
- openness
- recursion
- duality
- grammaticality
- grammatical
- ungrammatical
- cultural transmission
- innateness



OUTLINE OF CHAPTER 1

1. **Three basic concepts: sign, communication, and language**
 1. Sign
 2. Communication
 3. Language
2. **Signs**
 1. Three types of signs
 1. Icon
 2. Index
 3. Symbol
 2. Linguistic signs
 1. Morphemes
 2. Symbolic nature of morphemes
 3. Evidence for the symbolic nature of linguistic signs
 1. Translation equivalents
 2. Synonyms
 3. Iconically expressible meanings
 4. Exceptionality of iconic and indexical morphemes
3. **Language**
 1. Two-part structure of sign systems
 2. Three substructures of language
 1. Phonology
 2. Morphology
 3. Syntax
 3. Other types of linguistic structure
 4. Six aspects of the general nature of language
 1. Arbitrariness
 2. Displacement
 3. Creativity
 1. Openness
 2. Recursion
 4. Duality
 5. Grammaticality
 6. Cultural transmission



EXAMPLES AND PRACTICE

EXAMPLE

1. Logos for international development communication. The journal *Development Communication Report* introduced in its June 1981 issue the set of 'logos' presented in figure 1.3. The *Report* defined *logo* as a 'visual symbol representing an idea or concept'. According to the *Report*, the logos were 'created for the Clearinghouse on Development Communication by Washington designer Timothy Bradford Ward'. It says that logos are 'a kind of visual shorthand', which 'guide readers quickly to subjects of special interest to them', and 'make it easier for readers to scan the newsletter to get an idea of the content of the articles'.

Notice some of the iconic, indexical, and symbolic aspects of these 'logos for international development communication'.

- a. The 'audiocassette' logo is basically iconic. It has the actual appearance of an audiocassette.
- b. The 'nutrition' logo is basically indexical. It has pictures of a fish, a fruit or vegetable (a pineapple?), and a bowl of rice.
- c. The 'information' logo is basically symbolic. It consists of the letter *i*, which is only arbitrarily – in the English language – associated with this meaning.

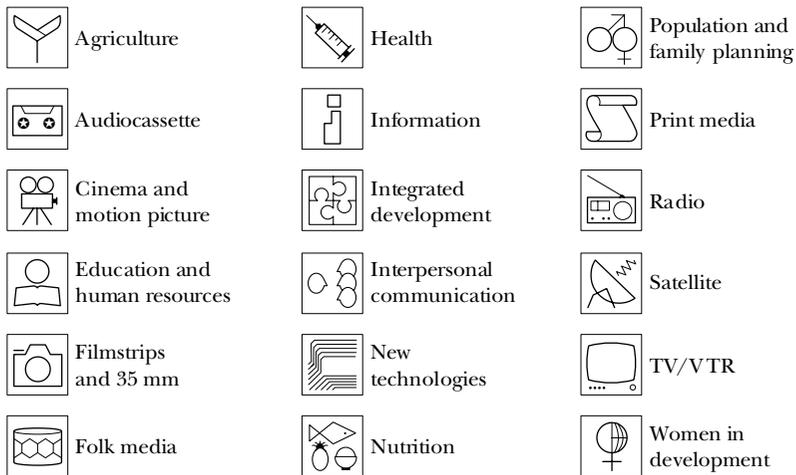


Figure 1.3 Logos for international development communication

Source: Development Communication Report, June 1981

PRACTICE

Identify six more of the logos for international development communication, two which are basically iconic, two which are basically indexical, and two of which are at least partly symbolic, and for each one say, as in the three examples above, what makes it iconic, indexical, or symbolic.

EXAMPLE

2. Corporation logos. Corporation logos are visual signs whose meaning is the corporation. A pair of examples is shown in figure 1.4, for Travelers Insurance and AT&T.

Often these logos mix iconic, indexical, and symbolic aspects with the intention to present a quick and clear impression of the product(s), service(s), name, and/or intended image of the corporation. Thus:

- a. The Travelers Insurance logo is an umbrella (red in color, actually). An umbrella gives protection and so does insurance, so this may be understood as an indexical sign. The umbrella also looks sort of like a letter 'T', possibly a symbolic sign, the initial letter of the word 'Travelers'.
- b. The AT&T logo has the English letters 'A', 'T', and 'T', a symbolic sign, and also a circle with lines crossing it. Perhaps the circle represents the world, and the lines represent electronic communication lines. These may be indexical signs, associations with the international electronic business of this corporation.

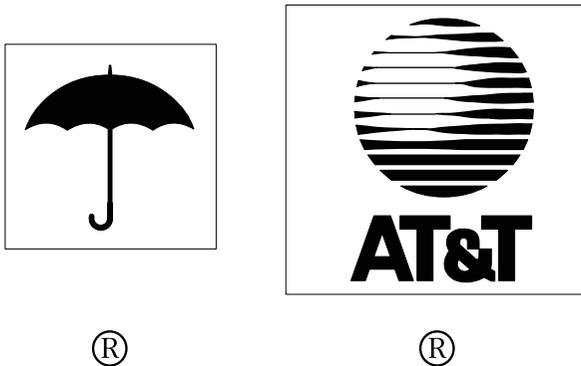


Figure 1.4 Two corporation logos: Travelers and AT&T

PRACTICE

Find in a magazine or an old (!) telephone book two more corporation logos which mix symbolic, indexical, and/or iconic aspects. Draw them or cut them out and attach them to a piece of paper, and briefly describe, as in the examples (a) and (b) above, the types of signs which they illustrate.

EXAMPLE

3. The ten most frequent words of English. (This exercise anticipates discussion in chapter 4.) The ten most frequent words of English in written texts – and they are very, very frequent – are the following, in order of first to tenth most frequent: *the, of, and, to, a/an, in, that, is, was, he* (Francis and Kučera 1967). Not only are the words frequent, but, because they are essential to expression in the language, they show this frequency very regularly, in any English text of sufficient size and whatever type.

PRACTICE

Take a 250-word text from a newspaper and underline all occurrences of these ten words. Attach the text to a page on which you list the number of occurrences of each, add them up, and calculate the total as a percentage of 250. See the 150-word example below (from *Newsweek*, May 15, 1995). Unless you choose an unusual text, this percentage will almost certainly be between 17% and 21%.

Parking is one of suburbia's highest achievements. In the United States the humblest copy-shop or pizzeria boasts as much space for cars as the average city hall. But it is also a curse that the vast acreage given over to asphalt is useless for any other purpose, and goes unused more than half the time anyway.

Most planners regard parking as a prerequisite for economic growth, like water. But downtown Portland, Ore., which strictly regulates parking, has been thriving with essentially the same space for cars as it had 20 years ago. Developers often build more parking than they actually need; a half-empty lot is presumed to reassure prospective tenants that they'll never run out of space for their cars. Yet a bank, a movie theater and a church are all full at different times. One simple improvement towns can make is to look for ways to share . . . (150 words)

the	6	in	1	
of	2	that	2	
and	2	is	4	
to	4	was	0	
a/an	5	he	0	
			<u>26</u>	$26 / 150 = 17.3\%$

EXAMPLE

4. Grammar of a fragment of English. Consider these eight sentences, a tiny fragment of the utterances of the English language.

- | | |
|--------------------|----------------|
| 1. Pat taps Sam. | 5. Pat naps. |
| 2. Sam taps Pat. | 6. Sam naps. |
| 3. Pat tapped Sam. | 7. Pat napped. |
| 4. Sam tapped Pat. | 8. Sam napped. |

Following is a grammar of these few sentences, including rules of spelling, phonology, morphology, and syntax.

Grammar of the eight sentences

1. Lexicon
 - a. *Pat*, a noun
 - b. *Sam*, a noun
 - c. *tap*, a verb followed by a noun
 - d. *nap*, a verb not followed by a noun
 - e. *s*, verb present tense suffix
 - f. *ed*, verb past tense suffix

2. Rules (a partial list)
 - A. Phonology and spelling
 - a. Words consist of the consonant phones written *p*, *m*, *t*, *n*, *s*, and *d*, and the vowel phones written *a* and *e*.
 - b. Every word begins with a consonant.
 - c. Every word has *a* after the initial consonant.
 - d. Every word ends with a consonant.
 - B. Morphology:
 - f. Verbs are followed by *s* or *ed*.
 - C. Syntax:
 - g. Every sentence begins with a noun (the subject).
 - h. Every subject is followed by a verb.
 - i. Some sentences have a second noun (the direct object) after the verb.

This grammar is simple but still longer and more complicated than the eight-sentence language that it describes! However, as the language is a fragment of English, so the grammar is a fragment of English grammar, and just like all grammars it expresses the characteristic of language known as **creativity**: its generalizations about the eight sentences effectively predict, or generate, new sentences. Four sentences not in the list above but which the grammar generates are:

Pat taps Pat.	Pat tapped Pat.
Sam taps Sam.	Sam tapped Sam.

There is also the creative characteristic of **openness**, such that if we just add to the dictionary the verb *pat*, a verb which, like *tap*, takes an object, the grammar would generate four additional sentences:

Sam pats Pat.	Sam patted Pat.
Pat pats Sam.	Pat patted Sam.

PRACTICE

Answer questions 1–4.

1. How does the grammar of the language – that is, statements of the grammar – have to be changed if:

- a. We add a new noun, *Tad*?
- b. We add a new verb *fan*, a verb with an object?
- c. We add a new noun *Jan*?
- d. We add a new verb *gab*, a verb with no object?
- e. We add a new verb *pay*, a verb with an object?

2. List ten additional sentences which the grammar now generates and describes.

3. Suppose we want to incorporate sentences like:

Sam and Pat pat Tad and Jan.	Jan and Pat fan Sam.
Tad and Sam nap.	Sam and Jan gabbed.
Jan and Sam paid Pat and Tad.	

State the new rules of grammar that will be necessary, if we want the sentences of the language to continue to be a subset of those of English.

4. Assume that in the world of this grammar there is only one Pat, one Sam, one Jan, and one Tad, and therefore, as in English generally, instead of saying *Pat fanned Pat*, speakers of the language say *Pat fanned himself*, or *herself*. Add *himself* and *herself* to the lexicon, and add to the meanings of names their appropriate genders, masculine or feminine. Let ‘Pat’ be either masculine or feminine. Write out a statement or ‘rule’ of the grammar that will appropriately substitute *herself* or *himself* for a name. State the rule clearly and carefully, so that it will yield English-like sentences.

EXAMPLE

5. Comparative grammar. The **arbitrariness** characteristic of language is usually evident in a comparison of languages, which typically express similar meanings very differently. Compare the following sentences of Amharic, an Ethiopian language, with their English translations. The Amharic sentence is written phonetically; *ə* is a vowel as in English *but*, *i* is a vowel not ordinarily heard in English, and *č* is the consonant usually spelled *ch* in English. Within words morphemes are separated by a hyphen, and a morpheme by morpheme translation of the Amharic sentences is provided to show how its organization differs from that of the English sentences.

Even though the languages are very different from one another, the sentences have almost the same number of morphemes with approximately the same meanings.

English

They are Mary-'s sister-s.

She is Mary-'s sister.

Amharic

jə-marjam ihit-oč n-aččəw.

of-Maryam sister-s be(pres. tense)-they

jə-marjam ihit n-at.

of-Maryam sister be(pres. tense)-she

The statement of the rules of grammar which describe such short English sentences is not simple.

- a. A pronoun *they* or *she* is first in the sentence.
- b. This is followed by the present tense verb, *is* after *she*, and *are* after *they*.
- c. The verb is followed by the possessing noun.
- d. The possessing noun has the suffix *-s*.
- e. This is followed by the possessed noun, a singular noun if the first word (subject of the sentence) is *she* and a plural noun if this is *they*.
- f. If the possessed noun is plural it has the suffix *-s*.

PRACTICE

Using similar statements, carefully describe the two Amharic sentences.